

ABSTRACT

A scanning optical microscope using a wavefront converting element suffers minimum off-axis performance degradation and allows the wavefront converting element to be controlled by a simple method. Further, a pupil relay optical system is simple in arrangement or unnecessary. A laser scanning microscope includes a laser oscillator 6 and a wavefront converting element 5 for applying a desired wavefront conversion to a laser beam 15 emitted from the laser oscillator 6. An objective 7 collects a wavefront-converted approximately parallel laser beam 17 emerging from the wavefront converting element 5 onto a sample 9. A detector 29 detects signal light emitted from the sample 9. An actuator 8 scans the objective 7 along a direction perpendicular to the optical axis.